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HOUSE OF REPRESENTATIVES

REPT. 98–593
Part I

PROVIDING COMPREHENSIVE NATIONAL POLICY DEALING WITH NATIONAL NEEDS AND OBJECTIVES IN THE ARCTIC AND NATIONAL MATERIALS POLICY

JANUARY 31, 1984.—Ordered to be printed

Mr. FUQUA, from the Committee on Science and Technology, submitted the following

REPORT

[To accompany S. 373]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred the bill (S. 373) to provide comprehensive national policy dealing with national needs and objectives in the Arctic, having considered the same, report favorably thereon with amendments and recommend that the bill do pass.

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The amendments are as follows:

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H703-1

TITLE I—ARCTIC RESEARCH AND POLICY ACT OF 1983

SHORT TITLE

SEC. 101. That this title may be cited as the "Arctic Research and Policy Act of 1983" and the word "Act" as used herein refers to this title.

FINDINGS AND PURPOSES

SEC. 102. (a) The Congress finds and declares that—

(1) the Arctic, onshore and offshore, contains vital energy resources that can reduce our dependence on foreign oil and improve the national balance of payments;

(2) as our only common border with the Soviet Union, the Arctic is critical to national defense;

(3) the renewable resources of the Arctic, specifically fish and other seafood, represent one of the Nation's greatest commercial assets;

(4) Arctic conditions directly affect global weather patterns and must be understood in order to promote better agricultural management throughout the United States;

(5) industrial pollution not originating in the Arctic region collects in the polar air mass, has the potential to disrupt global weather patterns, and must be controlled through international cooperation and consultation;

(6) the Arctic is a natural laboratory for research into human health and adaptation, physical and psycological, to climates of extreme cold and isolation and may provide information crucial for future defense needs;

(7) atmospheric conditions peculiar to the Arctic make the Arctic a unique testing ground for research into high latitude communications, which is likely to be crucial for future defense needs;

(8) Arctic marine technology is critical to cost-effective recovery and transportation of energy resources and to the national defense;

(9) most Arctic-rim countries, particularly the Soviet Union, possess Arctic technologies far more advanced than those currently available in the United States;

(10) Federal Arctic research is fragmented and uncoordinated at the present time;

(11) such fragmentation has led to the neglect of certain areas of research and to unnecessary duplication of effort in other areas of research;

(12) there is an immediate need to formulate a comprehensive national policy and program plan to organize and fund currently neglected scientific research with respect to the Arctic;

(13) the Federal Government, in cooperation with State and local governments, should focus its efforts on the collection and characterization of basic data related to biological, materials, and geophysical phenomena in the Arctic;

(14) research into the long-range health, environmental, and social effects of development in the Arctic is necessary to mitigate the adverse consequences of such development to the land and its residents;

(15) Arctic research expands knowledge of the Arctic, which can enhance the lives of Arctic residents, increase opportunities for international cooperation among Arctic-rim countries, and facilitate the formulation of national policy for the Arctic; and

(16) the Alaskan Arctic provides an essential habitat for marine mammals, migratory waterfowl, and other forms of wildlife which are important to the Nation and which are essential to Arctic residents.

(b) The purposes of this Act are—

(1) to establish an Arctic Research Commission to promote Arctic research and to establish Arctic research policy;

(2) to establish an Office of Arctic Research within the National Science Foundation; and

(3) to establish priorities and provide a Federal program plan for basic and applied scientific research with respect to the Arctic, including (without being limited to) natural resources and materials, physical and biological sciences, and social and behavioral sciences.

ARCTIC RESEARCH COMMISSION

SEC. 103. (a) The President shall establish an Arctic Research Commission (hereinafter referred to as the "Commission").

(b)(1) The Commission shall be composed of five members appointed by the President, with the Director of the National Science Foundation serving as a nonvoting, ex officio member. The members appointed by the President shall include—

(A) three members appointed from among individuals with expertise in areas of research relating to the Arctic (including, but not limited to, the physical, biological, health, and social sciences);

(B) one member appointed from among indigenous residents of the Arctic who are representative of the needs and interests of Arctic residents and who live in areas directly affected by Arctic resource development; and

(C) one member appointed from among individuals familiar with the Arctic and representative of the needs and interests of private industry undertaking resource development in the Arctic.

(2) The President shall designate one of the appointed members of the Commission, with the advice and consent of the Senate, to be chairperson of the Commission.

(c)(1) Except as provided in paragraph (2) of this subsection, the term of office of each member of the Commission appointed under subsection (b)(1) shall be four years.

(2) Of the members of the Commission originally appointed under subsection (b)(1)—

(A) two shall be appointed for a term of two years;

(B) two shall be appointed for a term of three years; and

(C) one shall be appointed for a term of four years.

(3) Any vacancy occurring in the membership of the Commission shall be filled, in the manner provided by the preceding provisions of this section, for the remainder of the unexpired term.

(4) A member may serve after the expiration of his term of office until the President appoints a successor.

((d)(1) A member of the Commission not otherwise employed by the United States shall be compensated at a rate equal to the daily equivalent of the rate for grade GS–16 of the General Schedule under section 5332 of title 5, United States Code, for each day such member is engaged in the actual performance of his duties as a member of the Commission.

(2) A member of the Commission who is an officer or employee of the United States or the State of Alaska shall serve without additional compensation.

(3) All members of the Commission shall be reimbursed for travel (in accordance with section 5701 of title 5, United States Code) and other necessary expenses incurred by them in the performance of their duties as members of the Commission.

(4) No member may be compensated for more than one hundred and thirty days of service each year in the performance of his or her duties as a member of the Commission.

DUTIES OF COMMISSION

SEC. 104. (a) The Commission shall—

(1) develop and establish an integrated national Arctic research policy;

(2) in cooperation with the Office of Arctic Research established under section 107 assist in establishing a national Arctic research program plan to implement the Arctic research policy;

(3) facilitate cooperation between the Federal Government and State and local governments with respect to Arctic research;

(4) coordinate and promote cooperative Arctic scientific research programs with other nations (subject to the foreign policy guidance of the Secretary of State);

(5) cooperate with the Governor of the State of Alaska and with such agencies and organizations of such State as the Governor may designate with respect to the formulation of Arctic research policy; and

(6) promote Federal interagency coordination of all relevant Arctic research activities.

(b) Not later than January 31 of each year, the Commission shall—

(1) publish a statement of goals and objectives with respect to Arctic research to guide the Office of Arctic Research in the performance of its duties; and

(2) submit to the President and to the Congress a report describing the activities and accomplishments of the Commission during the immediately preceding fiscal year.

COOPERATION WITH THE COMMISSION

SEC. 105. (a)(1) The Commission may acquire from the head of any Federal agency unclassified data, reports, and other nonproprietary information with respect to Arctic research in the possession of the agency which the Commission considers useful in the discharge of its duties.

(2) Each such agency shall cooperate with the Commission and furnish all data, reports, and other information requested by the Commission to the extent permitted by law; except that no such agency need furnish any information which it is permitted to withhold under section 552 of title 5, United States Code.

(b) With the consent of the appropriate agency head, the Commission may utilize the facilities and services of any Federal agency to the extent that such facilities and services are needed for the establishment and development of an Arctic research policy, upon such reimbursement as may be agreed upon the Commission and the agency head and taking every feasible step to avoid duplication of effort.

ADMINISTRATION OF THE COMMISSION

SEC. 106. The Commission may—

(1) in accordance with civil service laws and subchapter III of chapter 53 of title 5, United States Code, appoint and fix the compensation of an Executive Director and such additional staff personnel as may be necessary, but not to exceed a total of seven compensated personnel;

(2) procure temporary and intermittent services as authorized by section 3109 of title 5, United States Code;

(3) enter into contracts and procure supplies, services, and personal property; and

(4) enter into agreements with the General Services Administration for the procurement of necessary financial and administrative services, for which pay-

ment shall be made by reimbursement from funds of the Commission in such amounts as may be agreed upon by the Commission and the Administrator of the General Services Administration.

OFFICE OF ARCTIC RESEARCH

SEC. 107. (a) The Director of the National Science Foundation shall establish within the National Science Foundation an Office of Arctic Research (hereinafter referred to as the "Office").

(b) The Office shall—

(1) survey Arctic research conducted by Federal, State, and local agencies, the University of Alaska and other universities, and other private and public institutions to help to determine priorities for future Arctic research (including, without being limited to, natural resources and materials, physical and biological sciences, and social and behavioral sciences), and make recommendations thereon to the Commission and other interested parties;

(2) make grants for such Arctic research as may be necessary and desirable to further the goals and objectives of this Act, with special consideration being given to studies in neglected areas of Arctic research; and

(3) consult with the Commission with respect to—

(A) all ongoing and completed research programs and studies funded by the Office,

(B) recommendations proposed by the Office with respect to future Arctic research, and

(C) guidelines for awarding and administering Arctic research grants.

(c)(1) Not later than January 31 of each year, the Office shall transmit to the Commission a report describing the activities and accomplishments of the Office during the immediately preceding calendar year and making recommendations with respect to future Arctic research policy.

(2) Such report shall be available for public inspection at reasonable times.

(d) The Office shall cooperate with the Governor of the State of Alaska, and with such agencies as the Governor may designate, with respect to—

(1) the recommendations made to the Commission pursuant to subsection (b)(1); and

(2) the logistical support of Arctic research and the storage, transfer, and dissemination of Arctic scientific and technological knowledge and data.

(e) All Federal agencies and departments with Arctic research programs shall work collaboratively with the Office in carrying out its responsibilities as required by this Act.

5-YEAR ARCTIC RESEARCH PLAN

SEC. 108. (a) The Director of the National Science Foundation, through the Office and in consultation with the Commission, the Governor of the State of Alaska, the residents of the Arctic, the private sector, public interest groups, and other appropriate Federal officials having authority over Arctic research programs, shall prepare a comprehensive 5-year program plan (hereinafter referred to as the "Plan") for the overall Federal effort in Arctic research. The Plan shall be prepared and submitted to the President for transmittal to the Congress within one year after the enactment of this Act and shall be revised biennially thereafter.

(b) The Plan shall contain but need not be limited to the following elements:

(1) an assessment of national needs and problems regarding the Arctic and the research necessary to address those needs or problems;

(2) a detailed listing of all existing Federal programs relating to Arctic research, including the existing goals, funding levels for each of the five following fiscal years, and the funds currently being expended to conduct such programs;

(3) recommendations for such program changes and other proposals as may be considered necessary to meet the requirements of the policy and goals as set forth by the Commission and in the Plan as currently in effect; and

(4) a description of the actions taken by the Director of the National Science Foundation and the Office to coordinate the budget review process in order to ensure interagency coordination and cooperation in (A) carrying out Federal Arctic research programs, and (B) eliminating unnecessary duplication of effort among such programs.

(c) The Office of Management and Budget shall consider all Federal agency requests for research related to the Arctic as one integrated, coherent, and multiagency request which shall be reviewed by the Office of Management and Budget prior to submission of the President's annual budget request for its adherence to the Plan. The Commission shall, after submission of the President's annual budget request, review the request and report to Congress on adherence to the Plan.

COORDINATION AND REVIEW OF BUDGET REQUESTS

SEC. 109. The Office of Science and Technology Policy shall—

(1) review all agency and department budget requests related to the Arctic transmitted under section 108(c) and reflect the intent of section 104(a)(1), 104(a)(2), 104(a)(4), and section 108(b)(3) of this Act, and

(2) consult with and seek the advice of the Commission to guide the Office of Science and Technology Policy's effort, keeping the Office, Commission, and the Congress advised of such efforts.

AUTHORIZATION OF APPROPRIATIONS; NEW SPENDING AUTHORITY

SEC. 110. (a) There are authorized to be appropriated such sums as may be necessary for carrying out this Act.

(b) Any new spending authority (within the meaning of section 401 of th Congressional Budget Act of 1974) which is provided under this Act shall be effective for any fiscal year only to such extent or in such amounts as may be provided in appropriation Acts.

DEFINITION

SEC. 111. As used in this Act, the term "Arctic" means all United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering, and Chukchi Seas; and the Aleutian chain.

TITLE II—NATIONAL CRITICAL MATERIALS ACT OF 1983

SHORT TITLE

SEC. 201. This title may be cited as the "National Critical Materials Act of 1983" and the word "Act" as used herein refers to this title.

FINDINGS AND PURPOSES

SEC. 202. (a) The Congress finds that—

(1) the availability of adequate supplies of strategic and critical industrial minerals and materials continues to be essential for national security, economic well-being, and industrial production;

(2) the United States is increasingly dependent on foreign sources of materials and vulnerable to supply interruption in the case of many of those minerals essential to the Nation's defense and economic well-being;

(3) together with increasing import dependence, the Nation's industrial base, including the capacity to process minerals and materials, is deteriorating—both in terms of facilities and in terms of a trained labor force;

(4) research, development, and technological innovation, especially related to improved materials and new processing technologies, are important factors which affect our long-term capability for economic competi-

tiveness, as well as for adjustment to interruptions in supply of critical minerals and materials;

(5) while other nations have developed and implemented specific long-term research and technology programs to develop high-performance materials, no such policy and program evolution has occurred in the United States;

(6) establishing critical materials reserves, by both the public and private sectors and with proper organization and management, represents one means of responding to the genuine risks to our economy and national defense from dependency on foreign sources;

(7) there exists no single Federal entity with the authority and responsibility for establishing critical materials policy and for coordinating and implementing that policy; and

(8) the importance of materials to national goals requires an organizational means for establishing responsibilities for materials programs and for the coordination, within and at a suitably high level of the Executive Office of the President, with other existing policies within the Federal Government.

(b) It is the purpose of this Act—

(1) to establish a National Critical Materials Council under and reporting to the Executive Office of the President which shall—

(A) establish responsibilities for and provide for necessary coordination of critical materials policies, including all facets of research and technology, among the various agencies and departments of the Federal Government, and provide for the implementation of such policies;

(B) bring to the attention of the President, the Congress, and the general public such materials issues and concerns, including research and development, as are deemed critical to the economic and strategic health of the Nation; and

(C) ensure adequate and continuing consultation with the private sector concerning critical materials, materials research and development, use of materials, Federal materials policies, and related matters;

(2) to establish a national Federal program for advanced materials research and technology, including basic phenomena through processing and manufacturing technology; and

(3) to stimulate innovation and technology utilization in basic as well as advanced materials industries.

ESTABLISHMENT OF THE NATIONAL CRITICAL MATERIALS COUNCIL

SEC. 203. There is hereby established a National Critical Materials Council (hereinafter referred to as the "Coun-

cil") under and reporting to the Executive Office of the President. The Council shall be composed of three members who shall be appointed by the President and who shall serve at the pleasure of the President. Members so appointed who are not already Senate-confirmed officers of the Government shall be appointed by and with the advice and consent of the Senate. The President shall designate one of the members to serve as Chairman. Each member shall be a person who, as a result of training, experience, and achievement, is qualified to carry out the duties and functions of the Council, with particular emphasis placed on fields relating to materials policy or materials science and engineering. In addition, at least one of the members shall have a background in and understanding of environmentally related issues.

RESPONSIBILITIES AND AUTHORITIES OF THE COUNCIL

SEC. 204. (a) It shall be the primary responsibility of the Council—

(1) to assist and advise the President in establishing coherent national materials policies consistent with other Federal policies, and in carrying out activities necessary to implement such policies;

(2) to assist in establishing responsibilities for, and to coordinate, Federal materials-related policies, programs, and research and technology activities, as well as recommending to the Office of Management and Budget budget priorities for materials activities in each of the Federal departments and agencies;

(3) to review and appraise the various programs and activities of the Federal Government in accordance with the policy and directions given in the National Materials and Minerals Policy, Research and Development Act of 1980 (30 U.S.C. 1601), and to determine the extent to which such programs and activities are contributing to the achievement of such policy and directions;

(4) to monitor and evaluate the critical materials needs of basic and advanced technology industries and the Government, including the critical materials research and development needs of the private and public sectors;

(5) to advise the President of mineral and material trends, both domestic and foreign, the implications thereof for the United States and world economies and the national security, and the probable effects of such trends on domestic industries;

(6) to assess through consultation with the materials academic community the adequacy and quality of materials-related educational institutions and the supply of materials scientists and engineers;

(7) to make or furnish such studies, analyses, reports, and recommendations with respect to matters of

materials-related policy and legislation as the President may request;

(8)(A) to prepare a report providing a domestic inventory of critical materials with projections on the prospective needs of Government and industry for these materials, including a long-range assessment, prepared in conjunction with the Office of Science and Technology Policy in accordance with the National Materials and Minerals Policy, Research and Development Act of 1980, and in conjunction with such other Government departments or agencies as may be considered necessary, of the prospective major critical materials problems which the United States is likely to confront in the immediate years ahead and providing advice as to how these problems may best be addressed, with the first such report being due on April 1, 1985 and (B) to review and update such report and assessment as appropriate and report thereon to the Congress at least biennially; and

(9) to recommend to the Congress such changes in current policies, activities, and regulations of the Federal Government, and such legislation, as may be considered necessary to carry out the intent of this Act and the National Materials and Minerals Policy, Research and Development Act of 1980.

(b) In carrying out its responsibilites under this section the Council shall have the authority—

(1) to establish such special advisory panels as it considers necessary, with each such panel consisting of representatives of industry, academia, and other members of the private sector, not to exceed ten members, and being limited in scope of subject and duration; and

(2) to establish and convene such Federal interagency committees as it considers necessary in carrying out the intent of this Act.

(c) In seeking to achieve the goals of this and related Acts, the Council and other Federal departments and agencies with responsibilities or jurisdiction related to materials or materials policy, including the National Security Council, the Council on Environmental Quality, the Office of Management and Budget, and the Office of Science and Technology Policy, shall work collaboratively and in close cooperation.

PROGRAM AND POLICY FOR ADVANCED MATERIALS RESEARCH AND TECHNOLOGY

SEC. 205. (a) In addition to the responsibilities described in section 204, the Council shall have specific responsibility for overseeing and collaborating with appropriate agencies and departments of the Federal Government relative to Federal materials research and development policies and programs. Such policies and programs shall be consistent with the policies and goals described in the National

Materials and Minerals Policy, Research and Development Act of 1980. In carrying out this responsibility the Council shall—

(1)(A) establish a national Federal program plan for advanced materials research and development, designating the key responsibilities for carrying out such research and provding for coordination with the Office of Science and Technology Policy, the Office of Management and Budget, and such other Federal offices and agencies as may be deemed appropriate, and (B) annually review such plan and report thereon to the Congress;

(2) review annually the materials research, development, and technology authorization requests and budgets of all Federal agencies and departments; and in this activity the Council shall, in cooperation with the Office of Science and Technology Policy, the Office of Management and Budget, and all other Federal offices and agencies deemed appropriate, ensure close coordination of the goals and directions of such programs with the policies determined by the Council; and

(3) assist the Office of Science and Technology Policy in the preparation of such long-range materials assessments and reports as may be required by the National Materials and Minerals Policy, Research and Development Act of 1980, and assist other Federal entities in the preparation of analyses and reporting relating to critical and advanced materials.

(b) The Office of Management and Budget, in reviewing the materials research, development, and technology authorization requests of the various Federal departments and agencies for any fiscal year, shall consider all of such requests as an integrated, coherent, multiagency request which shall be reviewed by the Council and the Office of Management and Budget for its adherence to the national Federal materials program plan in effect for such fiscal year under subsection (a).

INNOVATION IN BASIC AND ADVANCED MATERIALS INDUSTRIES

SEC. 206. (a)(1) In order to promote the use of more cost-effective, advanced technology and other means of providing for innovation and increased productivity within the basic and advanced materials industries, the Council shall evaluate and make recommendations regarding the establishment of Centers for Industrial Technology as provided in Public Law 96-480 (15 U.S.C. 3705).

(2) The activities of such Centers shall focus on, but not be limited to, the following generic materials areas: corrosion; welding and joining of materials; advanced processing and fabrication technologies; microfabrication; and fracture and fatigue.

(b) In order to promote better use and innovation of materials in design for improved safety or efficiency, the Council shall establish in cooperation with the appropriate Federal agencies and private industry, an effective mechanism for disseminating materials property data in an efficient and timely manner. In carrying out this responsibility, the Council shall consider, where appropriate, the establishment of a computerized system taking into account, to the maximum extent practicable, existing available resources.

COMPENSATION OF MEMBERS AND REIMBURSEMENTS

SEC. 207. (a) The Chairman of the Council, if not otherwise a paid officer or employee of the Federal Government, shall be paid at the rate not to exceed the rate of basic pay provided for level II of the Executive Schedule. The other members of the Council, if not otherwise paid officers or employees of the Federal Government, shall be paid at a per diem rate comparable to the rate not to exceed the rate of basic pay provided for level III of the Executive Schedule.

(b) The Council may accept reimbursement from any private nonprofit organization or from any department, agency, or instrumentality of the Federal Government, or from any State or local government, for reasonable travel expenses incurred by any member or employee of the Council in connection with such member's and employee's attendance at any conference, seminar, or similar meeting.

POSITION AND AUTHORITIES OF EXECUTIVE DIRECTOR

SEC. 208. (a) There shall be an Executive Director (hereinafter referred to as the "Director"). who shall be chief administrator of the Council. The Director shall be appointed by the Council full time and shall be paid at the rate not to exceed the rate of basic pay provided for level III of the Executive Schedule.

(b) The Director is authorized—

(1) to employ such personnel as may be necessary for the Council to carry out its duties and functions under this Act, but not to exceed twelve compensated employees;

(2) to obtain the services of experts and consultants in accordance with the provisions of section 3109 of title 5, United States Code; and

(3) to develop, subject to approval by the Council, rules and regulations necessary to carry out the purposes of this Act.

(c) In exercising his responsibilities and duties under this Act, the Director—

(1) may consult with representatives of academia, industry, labor, State and local governments, and other groups; and

(2) shall utilize to the fullest extent possible the services, facilities, and information (including statistical information) of public and private agencies, organizations, and individuals.

(d) Notwithstanding section 367(b) of the Revised Statutes (31 U.S.C. 665(b)), the Council may utilize voluntary and uncompensated labor and services in carrying out its duties and functions.

RESPONSIBILITIES AND DUTIES OF THE DIRECTOR

SEC. 209. In carrying out his functions the Director shall assist and advise the Council on policies and programs of the Federal Government affecting critical and advanced materials by—

(1) providing the professional and administrative staff and support for the Council;

(2) assisting the Federal agencies and departments in appraising the effectiveness of existing and proposed facilities, programs, policies, and activities of the Federal Government, including research and development, which affect critical materials availability and needs;

(3) cataloging, as fully as possible, research and development activities of the Government, private industry, and public and private institutions; and

(4) initiating Government and private studies and analyses, including those to be conducted by or under the auspices of the Council, designed to advance knowledge of critical or advanced materials issues and develop alternative proposals, including research and development, to resolve national critical materials problems.

AUTHORITY

SEC. 210. The Council is authorized—

(1) to establish such internal rules and regulations as may be necessary for its operation;

(2) to enter into contracts and acquire property necessary for its operation to such extent or in such amounts as are provided for in appropriation Acts;

(3) to publish or arrange to publish critical materials infromation that it deems to be useful to the public and private industry to the extent that such publication is consistent with the national defense and economic interest; and

(4) to exercise such authorities as may be necessary and incidental to carrying out its responsibilities and duties under this Act.

AUTHORIZATION OF APPROPRIATIONS

SEC. 211. There are hereby authorized to be appropriated to carry out the provisions of this Act a sum not to exceed

$500,000 for the fiscal year ending September 30, 1985, and such sums as may be necessary thereafter.

DEFINITION

SEC. 212. As used in this Act, the term "materials" has the meaning given it by section 2(b) of the National Materials and Minerals Policy, Research and Development Act of 1980.

Amend the title so as to read: "An Act to provide for a comprehensive national policy dealing with national research needs and objectives in the Arctic, for a National Critical Materials Council, for development of a continuing and comprehensive national materials policy, for programs necessary to carry out that policy, including Federal programs of advanced materials research and technology, and for innovation in basic materials industries, and for other purposes.".

II. PURPOSE OF THE BILL

The purpose of Title I of the bill is to provide for the formulation of a coordinated national policy for Arctic research and for the coordination of Federal Arctic research programs with each other and with national policy. Title I establishes an Arctic Research Commission to promote Arctic research and to develop and establish a coordinated national Arctic research policy. The title establishes an Office of Arctic Research within the National Science Foundation which, in consultation with the Commission, will establish priorities and provide a Federal program plan for basic and applied scientific research with respect to the Arctic. In addition, the Office will award research grants in accordance with the Foundation's criteria, rules and procedures, as well as work to monitor and coordinate relevant Arctic research of other Federal entities.

The purpose of Title II of the bill is to establish responsibilities for and to provide for necessary coordination of critical materials policies and the programs necessary to implement those policies. Title II establishes a National Critical Materials Council under and reporting to the Executive Office of the President. The Council will make recommendations regarding budget priorities for materials activities in each of the Federal departments and agencies. The Council will focus attention for the private and public sectors on materials-related issues considered critical to the nation's economic and strategic well-being. Special attention is given to establishing a national Federal program for advanced materials research and technology as well as to stimulating innovation and technology utilization in basic as well as advanced materials industries.

III. BACKGROUND AND NEED FOR THE LEGISLATION

TITLE I. ARCTIC RESEARCH AND POLICY ACT OF 1983

The need for a comprehensive national policy for Arctic scientific research has been brought to the attention of Congress over the last several years. Although the U.S. presently spends more than $100 million annually on research in the Arctic region, these ef-

forts are spread among more than a dozen Federal agencies, a state government, and the private sector, with little or no policy focus or coordination. The United States is the only country, of those bordering on the Arctic Ocean, without some central organization devoted to sustained planning and support of Arctic research.

Some early efforts had been directed toward addressing this need. These included the establishment of the Interagency Arctic Research Coordinating Committee (IARCC) in 1968 (which was disbanded in 1978), and the Interagency Arctic Policy Group (IAPG) created by the National Security Council in 1971. Still, Federal Arctic research has continued to be fragmented and uncoordinated and this has led to apparent neglect of certain areas of research and unnecessary duplication of effort in other areas of research.

The Arctic area is of vital interest to this country. Twenty percent of our nation's domestically produced oil is found in the Arctic, and about sixteen percent of all proven reserves of natural gas are located in Arctic Alaska. The Arctic is our only common border with the Soviet Union, and thus critical to national defense. The Arctic also represents a major natural environmental area necessary to the maintenance of ecological and biological diversity. In fact, the Arctic contains one of the largest unspoiled natural environments on the earth with ecosystems of critical importance. It also is the homeland of distinct indigenous cultures whose rights and needs must be carefully considered. Further these unique native cultures provide invaluable expertise regarding the Arctic and its resources. Both the ecological environment as well as the human communities of the Arctic are highly sensitive to disruption as a consequence of development activities in this region. Thoughtful research and careful evaluations and planning are critically necessary to developing these national resources wisely. For these and other reasons concerns have focused on ways to formulate a comprehensive national policy, including legislation.

Such legislation, titled the Arctic Research and Policy Act (S. 1562), was passed in the Senate in the latter part of the 97th Congress, but no action was taken in the House. The bill, S. 373, was reintroduced into the 98th Congress, and this time a similar House bill was introduced (H.R. 2292). The Science, Research and Technology Subcommittee of the House Committee on Science and Technology held hearings on June 28, 1983 to review the merits of H.R. 2292 in addressing issues of Arctic research priority setting and coordination.

TITLE II. NATIONAL CRITICAL MATERIALS ACT OF 1983

Modern industrial materials are the basis for almost all technological advances necessary for our nation's economic well-being and security. Availability of such materials, either in the primary form as ore or basic elements or in more advanced forms as alloys or other semi-finished products, is critical to industries using old technology as well as advanced, high technology. The U.S. basic materials industry represents an annual economic output valued at $20 billion. When translated into secondary, semi-finished products this value jumps to over $200 billion or more than roughly 10 percent of our GNP.

Concern for materials and their importance to the nation, though going back several decades, only became intensified with the oil embargo and subsequent energy crisis of the nineteen seventies. Much effort and analysis at that time was focused primarily on the problem of import vulnerability and its effect on critical defense and aerospace industries. Such concern was based on our heavy reliance on importing important raw resources. Our national defense and economic well-being depends strategically on more than twenty non-fuel minerals, of which seven are imported at levels of 90 percent or more and the rest at levels of 50 percent or more of our annual needs. Included among the former are manganese, cobalt, chromium, and the platinum-group metals of which the world's reserves lie largely in Southern Africa and the Soviet Union. Given the complex politics of importation, the nation is particularly vulnerable in an economic and strategic sense to interruption in the supply of several of these elements. For instance, in the case of chromium, while there are potential metallurgical substitutes, there are no known elements which play the role of chromium in stainless steels, the backbone of our chemical processing industry, or in oxidation resistant alloys used in jet engines and high-temperature gas turbines.

Though import vulnerability cannot be depreciated, it has more recently become clear that attention must be shifted to new advanced materials and related technologies. The nation's problems are as much economic as they are security-related, as Japan, Europe and other nations are applying advanced materials concepts and technologies to major high technology industries such as transportation, communication and computers. Advances in ceramics, composites, new electronic materials, and advanced materials processing will be key to our nation's industrial and economic growth over the next decades. Though it appears that some aspects of these changes are recognized, the full appreciation of the range of problems and the means for dealing with them remains fragmentary.

Congress has worked to deal with these emerging problems and concerns. During the closing days of the 96th Congress, Public Law 96-479, the "National Materials and Minerals Policy, Research and Development Act of 1980" was signed into law. Public Law 96-479 represented the first major statement on materials policy that had been developed in over three decades, and required the President to take a number of steps in addressing materials problems. These included among others, the establishment of an organizational structure providing the following elements: policy analysis and decision determination within the Executive Office of the President; continuing long-range analysis of materials use to meet national security, economic, industrial and social needs, the adequacy and stability of materials supplies, and the industrial and economic implications of supply shortages or disruptions; continuing private sector consultation in Federal materials programs; and interagency coordination at the level of the President's Cabinet. In addition, the Act called for a balancing of environmental, energy and materials policies and defined several initiatives on the part of the Secretaries of Commerce, Defense and the Interior and the Director of the

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Office of Science and Technology Policy to begin the resolution of a variety of materials related problems.

The current Administration has taken a number of steps to address materials concerns and to implement P.L. 96–479. Much of its focus has been on issues of public lands for minerals development and strategic stockpiling. The interagency Committee on Materials as part of the advisory arm of the Office of Science and Technology Policy has been reaffirmed as the Federal research and development coordinating body. Policy matters have been handled through the newly formed Cabinet Council on National Resources and Enviroment.

Unfortunately, as noted in testimony by industry and others, these actions have been inadequate. While focusing on the important issues of minerals and mining materials, processing and advanced materials concerns have been largely ignored. Of four reports and assessments required by P.L. 96–479, only one has been officially presented to Congress as of October 1983. The Cabinet Council, while potentially useful as the required coordinating and implementing mechanism, has not been fully effective. As noted in testimony, the Council has met only infrequently on materials issues and on an *ad hoc* basis without permanence or clearly defined lines of communication with the rest of the Federal Government. Perhaps more important, another Administration with other priorities and organizational ideas could easily abolish such a mechanism.

In view of this, Title II provides the next logical step by establishing statutorily the organizational mechanism to determine materials policies and priorities as well as responsibilities for implementation of resulting programs. The National Critical Materials Council established by the legislation also focuses on advanced materials research and technology development in basic and advanced materials industries.

IV. Summary of the Bill

TITLE I. ARCTIC RESEARCH AND POLICY ACT OF 1983

To carry out the Act's purpose of establishing and carrying out an integrated national Arctic research policy, Title I provides for establishment of an independent, five-member Arctic Research Commission and, within the National Science Foundation, an Office of Arctic Research.

The Commission will be responsible for developing and establishing an integrated national Arctic research policy, and will assist the Office of Arctic Research in establishing a program plan to implement that policy. The Commission will facilitate cooperation between the Federal Government and State and local governments and will promote Federal interagency coordination. It will cooperate with the Governor and agencies of Alaska regarding Arctic research, and promote cooperative international Arctic research programs.

The Arctic Research Commission's members will be appointed by the President and will be representative of Arctic researchers, indigenous residents of the Arctic, and private industry. The Com-

mission will operate with an executive director with up to seven compensated staff. It will publish annually a statement of goals and objectives to guide the Federal coordinating function of the Office of Arctic Research, and will submit annual reports to the President and to Congress.

The Office of Arctic Research, established within the National Science Foundation by the Director of NSF, will survey all Federal and non-Federal Arctic research to help determine priorities for future research, and make grants for such Arctic research as will further the objectives of this title in accordance with NSF criteria, rules and procedure. The Office will consult with the Commission on research programs, and will transmit to the Commission an annual report.

Within one year after enactment of this Act the Office, through the Director, will prepare and submit to the President a comprehensive 5-year program plan for Federal Arctic research. The Plan will assess national needs regarding the Arctic and research necessary to address them, will list all existing Federal Arctic research programs and their funding levels, and make recommendations for program changes and other proposals necessary to meet the policy and goals developed by the Commission and included in the Plan.

The Plan will contain elements to ensure interagnecy coordination and cooperation in Federal Arctic research programs, and to eliminate unnecessary duplication among such programs. Aided by this coordination, the Office of Managememt and Budget (OMB) will be required to consider all Federal agency requests for Arctic research as one integrated, coherent and multiagency request, to be reviewed by OMB for adherence to the Plan prior to submission of the President's annual budget request. The Commission will, after submission of the President's budget request, review the request and report to Congress on adherence to the Plan.

To further assist the Federal coordinating role of the Office of Arctic Research and for adherence to the plan, the Office of Science and Technology Policy must review agency and department budget requests for Arctic research prior to the multiagency presentation to OMB.

Such sums are authorized to be appropriated as are necessary for carrying out this title but does not include additional research grant monies.

TITLE II. NATIONAL CRITICAL MATERIALS ACT OF 1983

Title II provides for establishing a three-member National Critical Materials Council under the Executive Office of the President. The Council will be responsible for advising the President and making recommendations to the Congress regarding national materials policy and programs or activities to implement those policies. The Council will help in assigning responsibilities and coordinating Federal materials-related policies, programs, and research activities as well as making budget recommendations to the Office of Management and Budget. The Council also will review and assess the various programs and activities of the government in accordance with the direction and policy of the National Materials and

Minerals Policy, Research and Development Act of 1980 (P.L. 96–479).

The Council will oversee the Federal materials R&D policies and programs and, in particular, establish a national Federal program plan for advanced materials research and development. The Office of Management and Budget will be required to consider materials research, development and technology funding requests as a single, multi-agency request in each fiscal year and indicate its adherence to the materials program plan.

The Council is required to evaluate and make recommendations for the establishment of Centers for Industrial Technology in generic materials areas. The Council, in order to promote better innovation of materials for safety and efficiency, will also establish a materials property data management and analysis system.

The Title also creates the position of Executive Director and up to twelve staff positions to provide the administrative and professional support for the Council. Up to five hundred thousand dollars is authorized for the first year and such sums as necessary thereafter.

V. Summary of Testimony and Administration Position on the Bill

TITLE I. ARCTIC RESEARCH AND POLICY ACT OF 1983

In reviewing the Arctic Research and Policy Act, testimony was heard from a wide range of interested groups including indigenous residents of the Arctic, local government officials, academia, industry, environmentalists and representatives of several Federal agencies with major Arctic research and policy interests. There was unanimous agreement as to the importance of a need for an integrated, coordinated U.S. Arctic policy and related research to the nation's overall interests, particularly relating to the nation's natural resources and environment.

Mr. Eugene Bower, the Mayor of the North Slope Borough, in noting their efforts over the past seven years to develop Arctic policy testified:

> Our involvement has made it clear to us that research efforts in the Arctic are very unorganized, without a central facility or institution, and have a desperate need for a cohesive program policy. In addition, this need is made even greater by the oil and gas development taking place right now without proper environmental safeguards.

Dr. Juan Roederer of the University of Alaska stated: "of all countries bordering on the Arctic, the U.S. is the only one without a national institute, laboratory or any other organization devoted to sustained planning and support of Arctic research."

Dr. R. C. Harcharek of the Ukpeagvik Inupiat Corporation testified:

> A comprehensive Arctic Research Policy would provide for a wholesome supportive exchange of ideas and data, both within and without the academic and governmental

areas. The importance of the coordination, accessibility and dissemination of data cannot be over emphasized.

Though generally supportive of the legislative vehicle passed by the Senate (S. 373), witnesses expressed a number of concerns. One major concern was the lack of explicit representation of indigenous residents in formulating research policies important to their native lands. Dr. Harcharek noted:

> . . . the original legislation expressly provided for genuine consultation with, and input from, the Inupiat in the decision-making process with respect to Arctic research objectives and policy. We are dismayed, however, that the subsequent Senate versions and the current House version of this legislation no longer strike this balance.

Other concerns focused on the "awkwardness" of the proposed Council and Commission and suggested a major revision of the organizational elements. Dr. William Y. Brown of the Environment Defense Fund expressed concern that the Council and Commission as defined in the current bill "may distort basic Arctic research, reduce the efficiency of applied research, and promote political controversy more than science". Other concerns focused on policy interaction with other elements of the Federal Government, as well as problems of possibly displacing ongoing research.

The Administration has formally endorsed S. 373 as passed by the Senate. That original proposal called for establishment of a five-member Presidential Council, a nine-member Commission, $25 million in additional research monies for each of the fiscal years from 1984 through 1989 and creation of a research data center. Testimony was heard from representatives of the Departments of Interior, State and Commerce, as well as the National Science Foundation. With the exception of a few recommended revisions all supported enactment of the bill as passed by the Senate.

TITLE II. NATIONAL CRITICAL MATERIALS ACT OF 1983

Hearings were held on materials research and development policy on May 17, 18, 19 and June 24, 1983 to focus on implementation of P.L. 9o-479, the National Materials and Minerals Policy, Research and Development Act of 1980 and to consider the need for further legislative action. Testimony and subsequent discussion emphasized: Federal responsiveness to national materials concerns; strategic and economic materials reserves; advanced materials research and development opportunities and needs; and innovation and technology development in basic and advanced materials industries.

Dr. George E. Keyworth, the Director of the President's Office of Science and Technology Policy testified:

> The Federal Government does have a broad role in materials, and we are determined to minimize impacts on national security because of dependence on foreign sources for critical and strategic materials, and also to assure our lead in developing advanced materials for tomorrow's technology . . . the increased attention and importance to the whole area of materials science that have been occurring

> in this country are extremely important. Materials has moved from a relatively low key research area into an area in the forefront of research.

He noted that OSTP had been active through the interagency Committee on Materials (COMAT) through various task forces working on a Federal materials R&D inventory, welding technology, rapid solidification, substitution and conservation of critical materials, advanced ceramics, and university research instrumentation needs. He also testified concerning the need for fostering interaction and cooperation among academic, Federal, and industrial scientists through such initiatives as the National Center for Advanced Materials at Lawrence Berkeley Laboratory in California.

Testimony from other representatives of the Federal Government while endorsing the need for effective materials and minerals policy and program coordination, felt the actions already undertaken through COMAT, as well as the Cabinet Council on Natural Resources and Environment were sufficient.

Testimony from the General Accounting Office noted that four issues required further attention if the goals of the 1980 act were to be fulfilled: (1) there is a further need for materials coordination in the Federal agencies; (2) the current materials program inadequately addresses the thrust of P.L. 96–479; (3) OSTP has not complied with the required annual materials needs assessments and (4) the 1980 act does not require periodic updating of the program plan.

Other witnesses from the non-government sectors also underscored the need for further coordination and priority setting. Former Senator Harrison Schmitt stated: ". . . in this issue as well as in all long-term and mid-term industrial base issues, there is no policy framework within the government—within the Congress or within the Administration—that is available to deal with these kinds of issues." Mr. William A. Owczarski, representing the National Association of Manufacturers noted:

> The President has assigned the task of coordinating the national materials policy to the Cabinet council. This was in recognition that indeed the national policy was uncoordinated and in need of cohesion. Yet the Cabinet council has met only infrequently on materials issues and operates on an ad hoc basis without permanence or clearly defined lines of communication with the rest of government. Of greater concern to us is that a future administration with different priorities or organizational preferences might abolish the Cabinet council and return materials policy to the ill-defined inactive status of the past.
>
> By recent action of its board of directors NAM has recommended creation by statute of an office of council of minerals and materials within the Executive Office of the President to insure that the goals of the 1970 and 1980 statutes are fulfilled and that important materials issues are considered on a timely and continuing basis. NAM believes that this organizational structure would be far more conductive to effective policy implementation that the present situation.

Although the Administration formally opposed the establishment of a Council on Critical Materials as proposed in the 97th Congress (H.R. 4281) the Administration has taken no offical position on the National Critical Materials Council proposed in this bill.

VI. Sectional Analysis of the Bill

TITLE I. ARCTIC RESEARCH AND POLICY ACT OF 1983

Sec. 101. Short title

Sec. 102. Findings and purposes

Outlines the importance of a comprehensive national policy and program to organize and fund currently neglected scientific research with respect to the Arctic. The purposes of this Act are to (1) develop and establish an Arctic Research Commission to promote Arctic research and to establish Arctic research policy; (2) establish an Office of Arctic Research within the National Science Foundation; and (3) establish priorities and provide a Federal program plan for basic and applied scientific Arctic research.

Sec. 103. Arctic Research Commission

States the President shall establish an Arctic Research Commission composed of five members appointed by the President, plus the Director of the National Science Foundation serving, as a nonvoting ex-officio member. Three members shall have expertise in Arctic research, one member shall be appointed from indigenous residents of the Arctic, and one shall be representative of the needs and interests of private industry in the Arctic. The President shall designate one member as Chairman. Terms of office and compensation are outlined.

Sec. 104. Duties of Commission

The Commission shall: (1) develop and establish an Arctic research policy; (2) assist the Office of Arctic Research in establishing a program plan to implement the Arctic research policy; (3) facilitate Federal and State and local governments' cooperation concerning Arctic policy; (4) promote cooperative international Arctic research programs; cooperate with the Governor of Alaska on Arctic research policy formulation; and (5) promote Federal interagency coordination of Arctic research activities. The Commission shall annually publish a statement of goals and objectives to guide the Office of Arctic Research, and submit to the President and Congress an activities report.

Sec. 105. Cooperation with the Commission

All Federal agencies shall cooperate with the Commission by furnishing all pertinent data, records, and information as guided by the Freedom of Information Act having to do with Arctic research, requested by the Commission.

Sec. 106. Administration of the Commission

Describes how the Commission shall be administered, with an executive director and up to 7 compensated staff.

Sec. 107. Office of Arctic Research

The Director of the National Science Foundation shall establish within the NSF an Office of Arctic Research. The Office shall: (1) survey all Arctic research by Federal, State and local agencies, universities, and other private and public institutions, and make recommendations to help determine priorities for future Arctic research; (2) make grants as necessary and desirable to further the objectives of this Act; and (3) consult with the Commission on research programs funded by the Office, recommendations proposed by the Office, and guidelines for awarding and administering Arctic research grants. The Office shall transmit annual reports to the Commission; and shall cooperate with the Governor of Alaska concerning: (1) recommendations made to the Commission pursuant to the Office's survey of Arctic research; and (2) the logistical support of Arctic research and the storage, transfer, and dissemination of Arctic scientific data.

Sec. 108. 5-year Arctic research plan

This section describes the comprehensive 5-year program plan for Federal Arctic research which the NSF Director (through the Office) shall prepare and submit to Congress and the President one year after enactment of this Act.

The Plan shall include: (1) an assessment of needs regarding the Arctic and research to address them; (2) a listing of all existing Federal programs related to the Arctic, including goals, funds currently being expended, and funding levels for next five years; (3) recommendations for program changes and other proposals; and (4) a description of actions taken by the Director of NSF and Office to coordinate the budget review process to insure interagency cooperation in carrying out programs and eliminating duplication among programs.

The Office of Management and Budget shall consider all Federal agency requests for Arctic-related research as one integrated, multiagency request and shall review it prior to submission of the President's annual budget request for its adherence to the Plan. After submission of the President's annual budget request, the Commission shall review the request and report to Congress on adherence to the Plan.

Sec. 109. Coordination and review and budget requests

The Office of Science and Technology Policy shall review all Arctic-related agency and department budget requests transmitted to the Office of Management and Budget and shall reflect the intent (1) to develop and establish an integrated national Arctic research policy, (2) to establish a research program plan to implement the Arctic research policy, (3) to coordinate and promote cooperative international Arctic research programs, and (4) to provide recommendations for program changes and other proposals as called for by the 5-year Plan and Commission.

Sec. 110. Authorization of appropriations; new spending authority

There shall be authorized such sums as may be necessary to carry out the Act; new spending authority is limited to amounts provided by appropriations.

Sec. 111. Definition

"Arctic" is defined as all U.S. and foreign territory north of the Arctic Circle and all U.S. territory north and west of the boundary formed by Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including Arctic Ocean and the Beaufort, Bering, and Chukchi Seas; and the Aleutian chain.

TITLE II. NATIONAL CRITERIA MATERIALS ACT OF 1983

Sec. 201. Short title

Sec. 202. Findings and purposes

Outlines the importance of strategic and critical industrial minerals and materials to national economic and defense needs, especially in the area of advanced materials and materials techonolgy. The purpose of the bill is to (1) establish a National Critical Materials Council; (2) establish a national Federal program for advanced materials research and technology; and (3) stimulate advanced materials innovation and technology.

Sec. 203. Establishment of the National Critical Materials Council

Establishes a Council under and reporting to the Executive Office of the President composed of three members appointed by the President. The Council members are required to have expertise in fields related to materials policy and/or materials science or materials engineering. One of the members will be designated as Chairman.

Sec. 204. Responsibilities and authorities of the Council

The Council shall: (1) help in establishing and carrying out national materials policies; (2) determine responsibilities and help coordinate Federal materials programs and policies; (3) review and monitor all Federal programs pertaining to materials with special focus on critical materials needs of basic and advanced technology; (4) overview national and international materials and minerals trends; (5) assess educational needs related to trained materials scientists/engineers; (6) make such studies and reports as necessary with a biennial report to Congress; and (7) make recommendations to Congress. The Council has the authority to establish private sector advisory panels and interagency committees as necessary.

Sec. 205. Program and policy for advanced materials research and technology

The Council shall specifically oversee all Federal Materials R&D activities and shall establish a national Federal program plan for advanced materials R&D. The Council shall review the plan annually and assist OSTP in preparation of long-range materials assessments as required by P.L. 96-479. OMB is required to consider all

materials research, development and technology requests as a integrated, coherent multi-agency request in each fiscal budget.

Sec. 206. Innovation in basic and advanced materials industries

The Council will evaluate and make recommendations for the establishment of Centers for Industrial Technology as provided by law (P.L. 96-479) focused on generic materials areas including corrosion, welding, advanced processing and fabrication, fracture and materials fatigue. The Council shall also establish an advanced materials property data management and analysis sytem.

Sec. 207. Compensation of members

The Chairman is to be paid at a level up to that for Level II of the Executive Schedule and the Members up to Level III.

Sec. 208. Position and authorities of Executive Director

This section creates an Executive Director position at a level up to that for Level III as a full time chief administrator with a staff of up to 12 compensated employees.

Sec. 209. Responsibilities and duties of the Director

The Director shall take such steps within his authority to assist and advise the Council by providing staff support, assisting other agencies in appraising their materials activities, cataloging public and private sector material R&D programs, and initiating such studies and analyses as necessary.

Sec. 210. Authority.

This section provides the operational authority of the Council.

Sec. 211. Authorization of appropriations

$500,000 in FY 1985 and such sums as necessary thereafter are authorized.

Sec. 212. Definition

"Materials" is defined as in P.L. 96-479.

VII. Explanation of the Bill

TITLE I. ARCTIC RESEARCH AND POLICY ACT OF 1983

In following with recommendations received in testimony this title provides for the establishment of an independent Arctic Research Commission appointed by the President and, within the National Science Foundation, of an Office of Arctic Research. The Commission will be responsible for developing and establishing an integrated national Arctic research policy, and will advise and assist the Office of Arctic Research whose responsibility it will be to coordinate the Federal effort and to establish a program plan to implement that policy.

In Section 102 the Congress finds that the importance of formulating a comprehensive policy and program plan for Arctic research is underscored by a number of considerations. The Arctic contains vital energy resources that can reduce our dependence on

foreign oil, as well as renewable resources such as fish and other seafood which represent a great commercial asset. Arctic conditions directly affect global weather patterns, and industrial pollution not originating in the Arctic region collects in the polar air mass and must be controlled as it has the potential to disrupt global weather patterns. Also, as noted in hearings most Arctic-rim countries, particularly the Soviet Union, possess Arctic technologies far more advanced than those currently available in the United States. This country's Arctic research is fragmented and uncoordinated, and this has led to the neglect of certain areas of research and to unnecessary duplication of effort in other areas of research.

In order to provide for representational policy-making, section 103 establishes the Arctic Research Commission which will be composed of five members appointed by the President, plus the Director of the National Science Foundation, serving as a non-voting, ex-officio member. The members appointed by the President will include three who have expertise in Arctic-related research (including but not limited to the physical, biological, health, and social sciences), one from indigenous native, residents of the Arctic, and one from private industry. This mix will ensure representation and balance of most interested and concerned constituencies.

This section also explains the operation of the Commission, terms of office for members and how they shall be compensated. No Commission member may be compensated for more than 130 days of service each year, as additional time would require automatic civil service benefits as full time Federal employees.

Section 104 describes the duties of the Commission, as follows:

(1) develop and establish an integrated national Arctic research policy;

(2) in cooperation with the Office of Arctic Research established under section 107, assist in establishing a national Arctic research program plan to implement the Arctic research policy;

(3) facilitate cooperation between the Federal Government and State and local governments with respect to Arctic scientific research;

(4) coordinate and promote cooperative Arctic scientific research programs with other nations (subject to the foreign policy guidance of the Secretary of State);

(5) cooperate with the Governor of the State of Alaska and with such agencies and organizations of such State as the Governor may designate with respect to the formulation of Arctic research policy;

(6) promote Federal interagency coordination of all relevant Arctic research activities;

(7) publish no later than January 31 of each year a statement of goals and objectives with respect to Arctic research to guide the Office of Arctic Research in the performance of its duties; and

(8) submit not later than January 31 of each year, to the President and to the Congress, a report describing the activities and accomplishments of the Commission during the immediately preceding fiscal year.

Section 105 states that the Commission may acquire from Federal agencies unclassified data, reports, and other nonproprietary Arctic-related information and that agencies must cooperate with the Commission to furnish all such data to the extent permitted by the Freedom of Information Act. Such requests do not include information regarding peer review of research proposals of other similar sensitive material. The Commission may arrange to utilize facilities and services of Federal agencies with appropriate reimbursement if they are needed for the establishment and development of an Arctic research policy but not for conducting actual research or related activities.

Section 106 explains that the Commission may fix the compensation of an executive director and such additional staff personnel as may be necessary, but not to exceed a total of seven compensated personnel. Volunteers or assigned personnel can be used as appropriate. Section 107 directs the Director of the National Science Foundation to establish within the National Science Foundation an Office of Arctic Research and sets forth its duties.

The Office will survey Arctic research conducted by Federal, State, and local agencies, universities and other private and public institutions to determine priorities for future Arctic research. The Office will make grants as may be necessary to carry out the objectives of this Act, as well as review and monitor the research activities of other agencies. Special consideration is to be given to studies in neglected areas of Arctic research identified by the Commission and the Office. These grants will be made according to NSF criteria, rules and procedures.

In order to maintain an adequate exchange of information and in order to help keep the Commission fully informed, the Office is required to consult with the Commission on all ongoing and completed research programs and studies funded by the Office, on recommendations regarding future Arctic research, and on guidelines for awarding and administering Arctic research grants. To enhance coordination of research the Office also is to cooperate with the Governor of Alaska and agencies he may designate, with respect to recommendations made to the Commission pursuant to the survey of Arctic research made by the Office, and with respect to logistical support of Arctic research and the storage, transfer, and dissemination of Arctic scientific information.

The Office through the Director is required to file annual reports with the Commission which reports will be available for public inspection at reasonable times. Nothing in this Act changes the authority and responsibility of the National Science Board or the Director of NSF pursuant to the NSF Act of 1950, as amended (42 U.S.C. 1861, et seq.) and related statutes.

In order to carry out the recommendations of the Commission and the Office Section 108 mandates establishing a comprehensive 5-year program plan for overall Federal effort in Arctic research, which is to be prepared by the Office and submitted to the President for transmittal to the Congress within one year from enactment of this Act.

The Plan shall contain but need not be limited to the following elements:

(1) an assessment of national needs and problems regarding the Arctic and the research necessary to address those needs or problems;

(2) a detailed listing of all existing Federal programs relating to Arctic research, including the existing goals, funding levels for each of the five following fiscal years, and the funds currently being expended to conduct such programs;

(3) recommendations for such program changes and other proposals as may be considered necessary to meet the requirements of the policy and goals as set forth by the Commission and in the Plan as currently in effect; and

(4) a description of the actions taken by the Director of the National Science Foundation and the Office to coordinate the budget review process in order to ensure interagency coordination and cooperation in (A) carrying out Federal Arctic research programs, and (B) eliminating unnecessary duplication of effort among such programs.

The Office of Management and Budget is required to consider all Federal agency requests for Arctic-related research as one integrated, coherent, and multiagency request to avoid duplication and unnecessary inefficiency. This request will be reviewed by the Office of Management and Budget prior to submission of the President's annual budget request for its adherence to the Plan. The Commission will review the request and report to Congress on adherence to the Plan, but not until after submission of the President's annual budget request.

In order to assist in interagency collaboration and to facilitate a coordinated, multiagency budget request, Section 109 calls for review by the Office of Science and Technology Policy of all budget requests related to the Arctic, and requires the OSTP to consult with the Commission and to keep the Office, Commission, and the Congress advised of its (OSTP's) efforts.

Section 110 authorizes such sums to be appropriated as may be necessary for carrying out the Act, and states that any new spending authority shall be limited by amounts appropriated.

Section 111 defines "Arctic", for purposes of this Act, to mean all United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Oceans and the Beaufort, Bering, and Chukchi Seas; and the Aleutian chain.

TITLE II. NATIONAL CRITICAL MATERIALS ACT OF 1983

This title which may be cited as the Critical Materials Act of 1982, provides for the organization of a Critical Materials Council under and reporting to the Executive Office of the President for the purpose of establishing responsibility for and coordinating national critical materials policies and to provide for their implementation. Particular emphasis is placed on research, technology and technological innovation as a means of reducing the nation's materials import vulnerability while at the same time recognizing the importance of integrating materials policy related to the nation's energy, environmental and other concerns. A national Federal pro-

gram for advanced materials research and technology is also established.

A. Findings and purposes

In Section 202(a) Congress finds that the availability of industrial materials vital to national defense (strategic) and important to the nation's economic competitiveness and well-being (critical) continue to be essential. Many materials may be appropriately placed in both categories as strategic and critical. Research, development, and technological innovation represent opportunities to reduce our materials import vulnerability. Equally imortant is the development of advanced materials and related technologies to maintain and enhance the nation's economic competitiveness. Other nations, including our allies, have developed and implemented specific long-term research and technology programs for high-performance materials. The U.S. has no comparable policy or program. Further, there exists no single Federal entity responsible for establishing critical materials policy or for coordinating and implementing that policy.

Section 202(b) states the purpose of this title as requiring the establishment of a permanent National Critical Materials Council in order to transcend the normal interagency competitiveness and to provide for the necessary balance in materials policy decisionmaking. Section 202(b) specifies that the Council will: (1) provide for necessary coordination of critical materials policies including research and development, among the various Federal agencies and departments and for the implementation of such policies; (2) bring to the attention of the President, the Congress and the general public such materials issues and concerns as are considered critical to the social, economic and strategic health of the nation; and (3) insure adequate and continuing consultation with the private sector concerning materials, materials research and development, Federal materials policies and related matters.

This section further notes the purpose of establishing a national Federal program for advanced materials research and technology. The Council will also act to stimulate innovation in basic and advanced materials industries.

B. Establishment of the Council on Critical Materials

Section 203 establishes a National Critical Materials Council under and reporting to the Executive Office of the President, to be composed of three members, one of whom shall be designated chairman. The members shall be appointed by the President with the consent, as appropriate, of the Senate. The legislation states that the members shall be duly qualified to carry out the purposes of the Council given their training, experience and achievement in fields relating to materials policy and or materials science and engineering. In addition, to provide greater balance with such policies as they concern environmental needs, the bill directs that at least one member shall have a background and understanding in environmentally related matters. The bill language gives the President the flexibility to appoint one or more members who might already be confirmed members of his Administration.

C. Responsibilities and authorities of the Council

Section 204 describes the primary responsibilities of the Council, as follows:

(1) To assist and advise the President in establishing a coherent national materials policy consistent with other Federal policies, and in carrying out activities necessary to implement such a policy. It is intended that, for example, policy related to the nation's materials, energy and environmental needs should be considered and evaluated in integrated form. Likewise, given the complicated politics and questions of importation, materials policies should be duly considered in foreign policy and national security questions;

(2) To assist in establishing responsibilities for and to coordinate materials-related policies, programs, and research and technology activities, and make budget priority recommendations for materials activities to OMB;

(3) To review and appraise the various programs and activities of the Federal Government in accordance with the policy and directions given the National Materials and Minerals Policy, Research and Development Act of 1980 (Public Law 96-479), and to determine the extent to which such programs and activities contribute to the achievement of such policy and directions;

(4) To monitor and evaluate the critical materials needs of basic and advanced technology industries;

(5) To advise the President of mineral and material trends, both domestic and foreign, and of the implications these trends have for the economy of the United States and the world and to national security. The probable effects of such trends on domestic industries should also be considered. Given the nation's import vulnerability—particularly with respect to critical and strategic materials such as chromium, cobalt, manganese, and the platinum-group metals—it is important that conditions in southern Africa, for example, where most of the world's reserves of materials are located, be carefully appraised;

(6) To assess the nation's educational needs as they pertain to quality and quantity of individuals specializing in materials science or engineering;

(7) To make or furnish such studies, analyses, reports and recommendations with respect to materials or materials-related policy and legislation as the President may request;

(8) To prepare a report to include a domestic inventory of critical resources with projections of the prospective needs of government and industry for these resources, as well as including a long-range assessment of the major materials problems likely to confront the United States and providing advice on resolving these problems; the subsection further stipulates that the report and assessment will be updated and reviewed periodically, but no less than every two years; and finally

(9) To recommend to the Congress any changes in the current policies, activities, and regulations of the Federal Government, and such legislation considered necessary to carry out the intent of this Act and the "National Materials and Minerals Policy, Research and Development Act of 1980".

Section 204(b) authorizes the Council to establish special non-federal advisory panels as it considers necessary in carrying out its responsibilities. The section calls for representation from industry, academia and other non-federal, private sector groups. The panels are to be limited to no more than ten members and to exist for limited times and scope of subject.

Similarly, the Council shall establish and convene such Federal interagency committees as it considers necessary in carrying out the intent of this Act.

Section 204(c) calls attention to the need for collaboration and cooperation between the Council and other Federal departments and agencies with responsibilities or jurisdiction related to materials or materials policy. The latter may include among others the National Security Council, the Council on Environmental Quality, the Office of Management and Budget, and the Office of Science and Technology Policy.

D. Program and policy for advanced materials research and technology

In addition to the responsibilities described in Section 204, the Act gives the Council specific responsibility for overseeing and collaborating with appropriate agencies and departments of the Federal Government relative to Federal materials research and development policies and programs.

In carrying out this responsibility the Council is to establish a national Federal program plan for advanced materials research and development. The plan coordinated with OSTP and OMB will also designate key responsibilities of the individual Federal agencies and departments in carrying out the research. The plan is to be reviewed annually and reported to Congress.

The Council shall also annually review the materials research and development authorization and budgets of all Federal agencies and departments. In addition, in this context, the Council shall, in cooperation with the Office of Science and Technology Policy, the Office of Management and Budget, and other Federal offices and agencies as deemed appropriate, ensure close coordination of the goals and directions of such programs with the policies as determined by the Council. Such a review process would ascertain any duplication, deficiencies in programs, opportunities for industrial innovation, and others. The Council will also assist OSTP in the preparation of the long-range materials assessment required by the National Materials and Minerals Policy, Research and Development Act of 1980, as well as providing assistance to other Federal entities in the preparation of analyses and reports related to critical materials.

Section 205(b) calls on the Office of Management and Budget to consider all materials research, development and technology requests as an integrated, coherent, multiagency request. This will be done in collaboration with the Council and reviewed for its adherence to the program plan of Section 205(a).

E. Innovation in basic and advanced materials industries

Section 206 calls for the Council to promote the use of more cost-effective, advanced technology and other means for providing for

innovation and increased productivity in advanced and basic materials industries in two ways. One, the Council will evaluate and make recommendations concerning the establishment of Centers for Industrial Technology called for in Public Law 96-480 focused on generic materials concerns. These include but are not limited to: corrosion, welding, advanced processing and fabrication, micro-fabrication and materials fracture and fatigue. Secondly, the Council will establish, in cooperation with appropriate Federal agencies and private industry an effective mechanism for disseminating materials property data. The Council will consider, where appropriate, establishing a computerized system taking into account systems already in existence.

F. Compensation of members and reimbursements

Section 207(a) stipulates that members of the Council shall serve full time if appropriate. Such members shall be paid at the rate not to exceed the rate of basic pay provided for level III of the Executive Schedule while the chairman shall be paid at the rate not to exceed the rate provided for level II. Reimubursement from any private nonprofit organization or from department, agency, or instrumentality of the Federal Government for reasonable travel expenses incurred by any member or employee of the Council in connection with such member's or employee's attendance at any conference, seminar or similar meeting is also provided for in Section 207(b).

G. Position of the Executive Director

Section 208 deals with the appointment by the Council of an Executive Director, who shall be the chief administrator for the Council. The Director shall be paid at the rate not to exceed the rate of basic pay provided for level III of the Executive Schedule and is given the authority described in Section 208(b); namely, (1) to employ such personnel as may be necessary for the Council to perform its duties and functions under this Act, but not to exceed twelve compensated employees; (2) to obtain the services of experts and consultants in accordance with the provisions of Section 3109 of title 5, United States Code; and (3) to develop such rules and regulations as are necessary to carry out the purposes of this Act. Section 7(c) allows for the possibility notwithstanding Section 367(b) of the Revised Statues (31 U.S.C. 665(b)), that the Council may utilize voluntary and uncompensated labor and services in carrying out its duties and functions.

H. Responsibilities and duties of the Director

The Director shall assist and advise the Council on policies and programs of the Federal Government affecting critical materials by the following means, identified in Section 209;

(1) providing professional and administrative staff and support for the Council;

(2) assisting the Federal agencies and departments in appraising the effectiveness of existing and proposed facilities, programs, policies, and activities of the Federal Government, including research and development, which affect critical materials availability and needs;

(3) cataloging, as fully as possible, research and development activities of the government, private, industry and public and private institutions;

(4) initiating government and private studies and analyses, including those to be conducted by or under the auspices of the Council, designed to advance knowledge of critical materials issues and develop alternatives, including research and development, to resolve national critical materials problems.

I. Authority

Section 210 authorizes the Council:

(1) to prescribe such rules and regulations as may be necessary for its operation;

(2) to enter into contracts and acquire property necessary for its operation to such extent or in such amounts as are provided for in appropriation Acts;

(3) to publish or arrange critical materials information that it deems to be useful to the public and private industry to the extent that such publication is consistent with the national defense and economic interest;

(4) to exercise such authorities as may be necessary and incidental to carrying out its responsibilities and duties under the Act.

J. Authorization of appropriations

Section 211 authorizes appropriations to carry out the provisions of the Act in the sum of up to $500,000 for the first fiscal year and such sums as may be necessary thereafter.

K. Definition

Section 212. As used in this Act, the term "materials" has the meaning given it by section 2(b) of the National Materials and Minerals Policy, Research and Development Act of 1980.

VIII. Committee Views

TITLE I. THE ARCTIC RESEARCH AND POLICY ACT OF 1983

A. Arctic Research Commission

The Committee intends that the Arctic Research Commission have responsibility for developing and establishing an integrated national Arctic research policy. Such policy determination is limited entirely to questions of research and is not to include policy questions in other areas such as foreign policy or national security. While the Act calls for collaborative interaction between the Commission, NSF, OSTP and other Federal agencies and departments, the Committee intends to clearly separate the policy role of the Commission from the implementation activities of the Federal Government. The Committee does not intend that the Commission at any time make grants for Arctic scientific or technological research, nor does it have the power to change agencies' grant-making authority. The Committee fully expects however that the implementation activities of the various agencies will closely adhere to policy and goals recommended by the Commission.

In setting such research policy the Committee intends that a clear distinction be made concerning the role of the Commission, and that of the National Science Board (NSB). Policy recommended by the Commission is expected to apply across the board to all Federal agencies and Departments, whereas policy and direction by the NSB remains applicable solely to the Foundation. The Committee does not intend that the Commission in any way interdict the normal lines of authority between the Foundation and the NSB. Hence, nothing in this Act is intended to change the authority and responsibility of the NSB or the Director of the NSF pursuant to 42 U.S.C. 1861, et seq., as amended and related statutes. NSF will clearly remain subject to the recommendations of the Board in all areas including the Arctic research programs. The Committee also intends that overlap in relevant policy reviews be avoided to the extent practicable.

B. Membership on the Commission

The Act calls for the President to appoint five members to the Arctic Research Commission, three from among Arctic research experts, one from indigenous residents of the Arctic and one from private industry with needs and interests in the Arctic. By "indigenous residents" the Committee intends that this refer specifically to native Inupiat Eskimos of the Arctic region as defined in the bill. The Committee also intends that the President in making appointments to the Commission make special consideration in selecting Arctic research representatives from universities involved in such research such as the University of Alaska and the University of Washington. The Committee believes that such institutions with a special expertise and focus as well as geographical interest should play a maximum role in establishing relevant policy, although it recognizes other institutions in other regions as having expertise of relevance as well. The Committee expects, however, that final selection of the members of the Commission, be determined on the basis of merit as the primary criterion. Finally, the Committee would note that it considers the social and health sciences as important to the goals of this Act as the physical and natural sciences. It thereby intends selection of members for the Commission come from both of these two basic groups.

C. Cooperation with the Commission

The Committee fully intends that those Federal agencies and departments with Arctic research interests and programs, including OMB, OSTP and NSF, work collaboratively with the Commission in carrying out its duties. While authorizing the Commission to acquire unclassified data, reports and other non-proprietary information that may not be withheld by agencies under the Freedom of Information Act, the Committee does not intend the Commission acquire information concerning peer review or other relevant information regarding research grant proposals. The Committee feels that acquiring such information could lead to problems of conflict of interest as well as creating an unwarranted intrusion into the peer review process.

D. Office of Arctic Research

In calling for the establishment of an Office of Arctic Research within the National Science Foundation, the Committee intends that the Foundation be given complete discretion as to the organizational location of the Office. The Committee intends that the Office serve as the identifiable focus for Federal Arctic research activity of the Foundation as well as the focus for monitoring and coordinating research implementation activities of all Federal programs.

The Act requires the Office to survey Arctic research in order to determine priorities for future research. The Committee intends that such survey incorporate the research conducted by NSF as well as that of other Federal agencies and departments. The latter will be particularly important to the ongoing coordinating role of the Office. The Committee believes it would be appropriate for the Office to make this information available on a regular, periodic basis. Publication of relevant research data in a similar format to the Antarctic activities in the *Antarctic Journal of the U.S.* seems appropriate to the Committee. In calling for dissemination of such research data, it is not the intent of the Committee that any expenditures for capital construction be allowed.

E. 5-year Arctic research plan

Section 108 of the Act calls for the preparation by the National Science Foundation of a 5-Year Arctic Research Plan. In carrying out this requirement, the Committee intends that OSTP work collaboratively with the Office of Arctic Research in coordinating the annual budget requests of the other Federal agencies and departments and in submitting a single, multiagency request to OMB. In carrying out this requirement the OSTP will also consult closely with the Commission.

F. Authorization of expenditures

The Committee intends that appropriations authorized under this Act shall be solely for the operation of the Commission in carrying out its responsibilities. Funds necessary for the operation of the Office are expected by the Committee to be included in the Foundation's annual operating budget. No new monies are intended by the Committee to be authorized by this Act for research grants by the Office or any other Federal agency or department. Such monies must continue to follow normal budget and appropriation requests. In addition, establishment of the Office of Arctic Research should be achieved without expense to other NSF research programs.

TITLE II. NATIONAL CRITICAL MATERIALS ACT OF 1983

A. National Critical Materials Council

The Committee intends that the Council as provided for in Section 203 be the focus for all Federal policies and activities relating to materials critical to the nation's economy and defense. Such policy and decision-making can not be conducted in a vacuum and as such must take into account to the extent practicable other,

inter-related, Federal policies, such as energy and environment. The Committee thus intends that the Council operate closely and collaboratively with the other Federal agencies and departments. In particular these include the Office of Science and Techology Policy, the Office of Management and Budget, the National Security Council and Council on Environmental Quality.

In establishing the Council the Committee intends that the Administration be given necessary flexibility (within limitations as imposed) to allow the Council to be effective in carrying out its duties. Recognizing that each Administration has its own set of organizational priorities and style, the bill allows the President to consider for appointment to the Council, high ranking officials already serving as Senate confirmed members of his Administration. The Committee fully expects however, that such appointments fulfill carefully the requirement of specific expertise by the members in materials policy, science and engineering. The additional requirement that at least one member have a background in environmentally related issues is intended by the Committee to provide a continuing awareness by the Council of environmental factors and concerns which relate to the nation's materials and minerals policies. The Committee intends that those members not serving in other Federal positions would serve full time on the Council.

B. Responsibilities of the Council

The legislation gives the Council specific responsibilities regarding materials policies and implementation. The Committee recognizes that individual Federal policies are often divergent in nature and tend to change over time. Thus continually seeking to establish a permanent, coherent and comprehensive materials policy could prove illusory at best. The Committee intends that the Council use the policies as established in P.L. 96-479 as a broad outline to guide their actions in establishing additional policies and in carrying out activities to insure implementation. The Committee believes that coordinating implementation of such policies should be a major thrust of the Council. In carrying out this responsibility, the Committee intends that the Council work closely with OMB, OSTP and other Federal officials in determining responsibility in coordinating these materials issues related activities.

The Committee believes strongly that the Council should carefully assess critical materals needs, domestic and international, which may affect the overall health of the nation. Various actions calling for such assessments and reviews are provided for in the bill. The Committee intends that the Council advise the President, and through him, the executive agencies on problems and issues in the materials areas that they may not yet have addressed. Such advice should also be brought to the attention of Congress and the public as deemed appropriate. In carrying out such assessments and reviews, the Committee does not intend that these efforts unnecessarily duplicate data gathering, analyses and studies undertaken elsewhere. Rather, the Committee intends that the Council use to the extent practicable such information, analyses and studies already carried out by other Federal agencies or departments and/or the private sector. The Committee further believes it appropriate that the Council focus on technical, economic and policy analyses of ma-

terials issues that cut across, or lie outside, the responsibilities of line agencies.

While recognizing the importance of strategic stockpiling to our nation's overall materials policy, the Committee is aware that a number of Federal agencies and departments, including the General Services Administration and the Federal Emergency Management Agency, have primary responsibility. It is not the Committee's intent that the Council intervene in the current management and policy authorities of the national defense stockpile. Rather, the Committee intends that the Council keep itself apprised of those agencies' ongoing activities as they may affect other materials policies or issues and make only such recommendations as considered necessary to promote consistent national policy.

Finally, the Committee strongly views the Council as acting as the focal point for acquiring information and input for Federal policy-making by interested, nonfederal groups. These include industry, labor, academia and others such as environmental groups. The Committee intends that the special advisory panels as provided be extensively used by the Council for this purpose. The Council, consistent with its responsibilities to the President and Congress, should also operate to inform such interested groups of new developments in materials policy and Federal materials initiatives.

C. Executive Director of the Council

The legislation provides in Section 208 for a full time executive Director to serve as chief administrator of the Council. The Committee believes strongly that such a position be full time in order to provide the necessary continuing attention to the problems and issues of materials. This is particularly important given the possibility that some or all of the members of the Council might serve in additional capacities in the Federal government. Because of the importance of this position and because of the need to provide technical, as well as policy understanding, the Committee intends that the Executive Director be eminently qualified in the area of materials science and/or engineering in addition to having the necessary experience in administration and policy setting. Permanent support staff or personnel as provided in the section should also be technically qualified as necessary. While such support personnel is limited to no more than twelve compensated employees, the Committee believes the Executive Director should be able to use such assigned Federal employees from line agencies as considered necessary and appropriate. Such assignments would be, however, limited in duration.

D. National Federal program plan for advanced materials R&D

Section 205 of the Act calls for the Council to establish, in collaboration with OSTP, OMB and other affected agencies a national Federal program plan for advanced materials R&D. The Committee expects that such plan carefully reflect the priorities and needs identified by the Council in its overall materials assessments and reviews. The Committee intends that such a plan include at a minimum: (1) an assessment of current national materials research and technology needs and problems; (2) identification of priorities for

research to address those needs or problems; (3) a listing of major existing Federal materials research and technology programs—to include existing funding and goals as well as proposed funding levels over the next five years; and (4) recommendations for program initiatives and changes to meet policies and goals as set forth by the Council.

The Committee intends that the Council work collaboratively with the various Federal agencies in reviewing annually the materials research, development and technology budget requests and in coordinating their presentation to OMB. In particular the Committee intends the Council work closely with OSTP in carrying out the coordination and review of these requests. The Committee expects the Council to act as the focal point for developing an integrated, coherent multiagency request for consideration by OMB. The Committee expects that upon presentation of the President's annual budget to Congress, that the Council shall incorporate as part of its annual report on the program plan the adherence of the budget request to the current goals and directions of the plan.

E. Innovation in basic and advanced materials industries

The Committee feels that further efforts by the Federal government and by others are essential to promote innovation and productivity in the basic and advanced materials industries. Testimony before the Committee clearly identified the need for more collaborative efforts between the Federal government, industry and academia in generic materials research and technology. The Committee believes that the centers for industrial technology already provided for in law (P.L. 96-480), is one such mechanism. As such, the Committee intends that the Council evaluate carefully establishment of such centers in generic materials areas identified in section 206(a)(2) and make appropriate recommendations as part of the Council's long-range assessment report. The Committee also intends that use of such centers be flexible and that such use should take into account various means of support including joint funding and cost sharing. While identifying specific areas of concern, the Committee does not intend that this listing exclude other broad generic areas which could be identified later as having higher priority, or participation by other Federal Agencies in addition to the Department of Commerce or the National Science Foundation.

The Committee further intends that the Council in cooperation with the appropriate Federal agencies and private industry establish a materials property data system. The Committee intends that careful consideration be given to using advanced computer technology for the storage, dissemination and analysis of materials properties necessary for improved manufacturing design and production. The Committee further believes that programs to provide for necessary new materials properties data bases be carefully evaluated. The Committee fully intends that the Council in establishing such a system fully account for, to the extent practicable, existing and available systems, public and private, to avoid unnecessary duplication. While various models could prove effective, the Committee believes the National Bureau of Standards' phase diagram computer system, established in conjunction with the private sector, could provide one such model.

F. Reporting functions of the Council

The Committee believes strongly that the main focus of the Council should be in the identified areas discussed above rather than in issuing unnecessary and burdensome reports to Congress. Those sections of the Act calling for reports to Congress are included to allow the Congress to fulfill its responsibility in necessary oversight of the Council's activities. The Committee expects that the Council, in fulfilling those requirements, incorporate to the extent practicable and useful such data, information and analysis already existing or published by other Federal agencies or departments.

IX. Legislative History of the Bill

TITLE I. THE ARCTIC RESEARCH AND POLICY ACT OF 1983

The Arctic Research Policy Act was first introduced in the Senate (S. 1562) on July 31, 1981 by Senator Murkowski. The bill was referred to the Committee on Governmental Affairs, which held hearings in April and June, 1982 and reported S. 1562 (S. Rept. 97-660) on October 18, 1982. The bill passed the Senate on a voice vote December 10, 1982 and was referred to the House Committee on Science and Technology. No subsequent action was taken.

In the 98th Congress, Senator Murkowski introduced S. 373 on February 1, 1983. The bill was referred to the Committee on Governmental Affairs and subsequently to its Subcommittee on Civil Service, Post Office, and General Services. The Subcommittee approved the bill for Full Committee consideration March 17, 1983 and the Full Committee ordered S. 373 reported with amendments the same day. The report (S. Rept. 98-159) was filed on June 21, 1983, and S. 373 was referred to the House Committee on Science and Technology on June 29, 1983.

In the House, on March 23, 1983 Congressman Don Young introduced H.R. 2292, a bill which was technically identical to S. 373, which was referred to the House Committee on Science and Technology. The Committee's Subcommittee on Science, Research and Technology, to which the bill was referred, held hearings on H.R. 2292 on June 28, 1983.

The following witnesses were heard:

Congressman Don Young.
Senator Frank Murkowski.
Mr. R. Tucker Scully, Director, Office of Ocean and Polar Affairs, Department of State.
Mr. William P. Horn, Deputy Undersecretary, Department of Interior.
Dr. Ned A. Ostenso, Acting Assistant Administrator for Research and Development, National Oceanic and Atmospheric Administration.
Dr. Edward P. Todd, Director, Division of Polar Programs, National Science Foundation.
Dr. Juan Roederer, Director, Geophysical Institute, University of Alaska.
Mr. Roger C. Herrera, Sohio Alaska Petroleum Company.

Mr. Eugene Brower, Mayor, North Slope Borough accompanied by:
Mr. Hans-Pavia Rosing, President Inuit Circumpolar Conference.
Dr. Robert Harcharek, Director of Special Projects, Ukpeaguik Inupiat Corporation.
Mr. William Y. Brown, Environmental Defense Fund.

On October 28, 1983 the Subcommittee on Science, Research and Technology held markup on S. 373 and moved the bill as amended to the full Science and Technology Committee, where, a quorum being present, it was ordered reported, as amended, on November 10, 1983.

TITLE II. NATIONAL CRITICAL MATERIALS ACT OF 1983

H.R. 4186, the National Critical Materials Act of 1983 was introduced by Mr. Glickman for himself and Mr. Fuqua, Mr. Young of Alaska, Mr. Young of Missouri, Mr. Mineta, Mr. Kogovsek, Mr. Scheuer, Mr. Walgren, Mr. Brown of California, Mr. Dymally and Mr. Gephardt on October 20, 1983. The bill was referred to the Committee on Science and Technology and subsequently referred to its Subcommittee on Transportation, Aviation and Materials.

Hearings on national materials policy and research were held on May 17, 18 and 19, and June 24, 1983.

The following is a list of witnesses who testified:

May 17, 1983

Congressman Ray Kogovsek, Colorado.
George Keyworth, Director, Office of Science and Technology Policy, Executive Office of the President.
John Sprague, Associate Director, Resources, Community and Economic Division, U.S. General Accounting Office.
Daniel N. Miller, Jr., Assistant Secretary for Energy and Minerals, U.S. Department of the Interior.
Richard Donnelly, Director, Industrial Resources, Office of the Deputy Under Secretary for Research and Engineering, U.S. Department of Defense.
Robert D. Wilson, Director, Office of Strategic Resources, U.S. Department of Commerce.

May 18, 1983

Senator Harrison Schmitt, former Senator from New Mexico.
Louis O. Giuffrida, Director, Federal Emergency Management Agency.
Roy Markon, Jay Solomon Associates.
Thomas N. Walthier, Minerals Exploration Coalition.

May 19, 1983

Congressman Don Ritter, Pennsylvania.
Merton Flemings, Head, Department of Materials Science and Engineering, Massachusetts Institute of Technology.
Robert Mehrabian, Director, Center for Materials Science, National Bureau Standards.
Rustum Roy, Brookings Institute.
Hope M. Babcock, National Audubon Society.

June 24, 1983

Adm. B. R. Inman (Retired), President and chief executive officer, MCC Corp.
James D. Santini of Jones, Jones, Bell, Close and Brown.
William A. Owczarski, Chairman, Non-fuel Minerals Task Force, National Association of Manufacturers.
Timothy W. Stanley, President, International Economic Policy Association.
Charles S. Tuesday, Technical Director for chemical and materials sciences, General Motors Technical Center.

On October 27, 1983 the Subcommittee on Transportation, Aviation and Materials met and favorably reported the bill with no amendments. On November 10, 1983 the Full Committee on Science and Technology met for the purpose of marking up the bill. The bill, as amended, was incorporated in S. 373, the Arctic Research and Policy Act of 1983 as Title II of that bill. S. 373 as amended was ordered reported favorably by a unanimous vote of the Committee (41 ayes, 0 nays), a quorum being present.

X. Effect of Legislation on Inflation

In accordance with Rule XI, Clause 2(1)(4), of the Rules of the House of Representatives, this legislation is assessed to have no adverse inflationary effect on prices and costs in the operation of the national economy.

XI. Congressional Budget Act Information

The bill provides for new authorization rather than new budget authority and consequently the provisions of section 308(a) of the Congressional Budget Act are not applicable.

Under a separate section of this report, a five-year current programs estimate is provided in response to the requirement of section 403 of the Congressional Budget Act of 1974.

XII. Congressional Budget Office Cost Estimate

The Committee has received the following communication regarding the cost of S. 373 from the Director of the Congressional Budget Office:

U.S Congress,
Congressional Budget Office,
Washington, D.C., November 17, 1983.

Hon. Don Fuqua,
Chairman, Committee on Science and Technology, House of Representatives, Rayburn House Office Building, Washington, D.C.

Dear Mr. Chairman: The Congressional Budget Office has prepared the attached cost estimate for S. 373, consisting of the Arctic Research and Policy Act of 1983 and the National Critical Materials Act of 1983.

If you wish further details, we will be pleased to provide them.

Sincerely,

Rudolph G. Penner, *Director.*

CONGRESSIONAL BUDGET OFFICE—COST ESTIMATE

NOVEMBER 17, 1983.

1. Bill number: S. 373.

2. Bill title: Arctic Research and Policy Act of 1983 and National Critical Materials Act of 1983.

3. Bill status: As ordered reported by the House Committee on Science and Technology, November 10, 1983.

4. Bill purpose: Title I of the bill establishes a five-member Arctic Research Commission to develop an integrated national Arctic research policy. This title also establishes an Office of Arctic Research within the National Science Foundation (NSF). That office is to conduct a survey of Arctic research, make grants for such research, and report to the Commission annually on the office's activities. The NSF, through the Office of Arctic Research, is directed to prepare and submit to Congress a five-year plan outlining the overall federal effort in Arctic research.

Title II establishes a National Critical Materials Council within the Executive Office of the President to assist the President in developing and coordinating national materials policies.

5. Estimated cost to the Federal Government: The estimated costs of the Arctic Research Commission and the National Critical Materials Council are summarized in the following table:

[By fiscal years, in millions of dollars]

	1984	1985	1986	1987	1988
Estimated authorization level	0.3	1.0	1.0	1.1	1.1
Estimated outlays	.3	.9	1.0	1.1	1.1

This estimate excludes any costs associated with the National Science Foundation and its Office of Arctic Research. According to the Committee staff, funding for NSF activities will be authorized in a separate bill. The largest potential cost to the NSF would be for research grants, for which the Congress would set the funding level.

The costs of this bill fall within the budget function 250.

Basis of estimate: CBO assumes that this bill would be enacted by January 1, 1984, and that all funds necessary will be appropriated.

CBO estimates that Title I would cost approximately $0.5 million per year. This estimate is based on the size of the commission and staff established in the bill, and costs incurred by similar commissions. Costs for Title I were assumed to begin in fiscal year 1984.

The bill authorizes $0.5 million for Title II in fiscal year 1983, and such sums as may be necessary thereafter. The estimated authorization for fiscal years 1986 through 1988 is based on the 1985 level, adjusted for projected inflation.

6. Estimated cost to State and local governments: None.

7. Estimate comparison: None.

8. Previous CBO estimate: On March 23, 1983, CBO prepared a cost estimate for S. 373, the Arctic Research and Policy Act of 1983, as ordered reported by the Senate Committee on Governmental Af-

fairs. That version of the bill concerned only Arctic research activities. Based on authorizations established in the bill, CBO estimated outlays of $15 million in fiscal year 1985, and $25 million in each fiscal year thereafter.

9. Estimate prepared by: Jeff Nitta (226–2860).

10. Estimate approved by:

C. G. NUCKOLS
(For James L. Blum,
Assistant Director for Budget Analysis).

XIII. OVERSIGHT FINDINGS AND RECOMMENDATIONS BY THE COMMITTEE ON GOVERNMENT OPERATIONS

Pursuant to Rule X, Clause 2(b)(2), and Rule XI, Clause 2(1)(3) of the rules of the House of Representatives, no findings or recommendations have been submitted by the Committee on Government Operations for inclusion in this report.

XIV. COMMITTEE OVERSIGHT FINDINGS AND RECOMMENDATIONS

Pursuant to Rule XI, Clause 2(1)(3) of the Rules of the House of Representatives, and under the authority of Rule X, Clause 2(b)(1) and Clause 3(f), the Committee's oversight findings and conclusions are reflected in the recommendations found in the present bill and report.

XV. CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with Rule XIII Clause 3 of the Rules of the House of Representatives, it is hereby stated that no changes to existing law result from S. 373.

XVI. COMMITTEE RECOMMENDATION

A quorum being present, the Committee ordered favorably reported the bill as amended by roll call vote (41–0) of those present.

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